

ELECTROPOLISHING

INSIDE THE HIGHLY EFFECTIVE PROCESS

Electropolishing has been evolving since the mid-20th century, when scientists first started commercially treating metals with the combination of electricity and industrial chemicals. Since then, the process has grown more sophisticated, and now it can be used to make microscopic changes to metal parts.

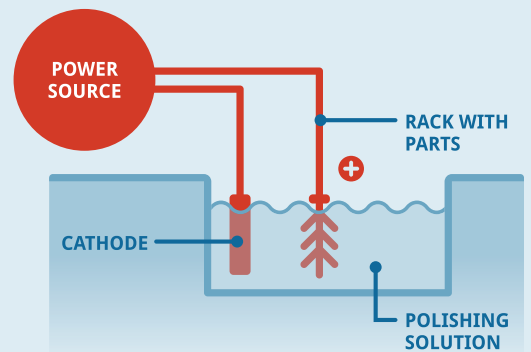
So how does the process work, exactly, and what's the point in making changes so small?

Q: WHAT IS ELECTROPOLISHING?

A: Electropolishing is a "reverse plating" process, removing the outer skin of metal instead of depositing metal on the surface.

To accomplish this, a metal part is charged positive and submerged in a chemical bath. Then, current is applied to activate the process.

The electric current along with the electrolyte pull metal ions off the surface of the part, leaving a smooth, shiny surface behind. Like a snake shedding its skin, the surface defects are stripped away, and a new surface is revealed.

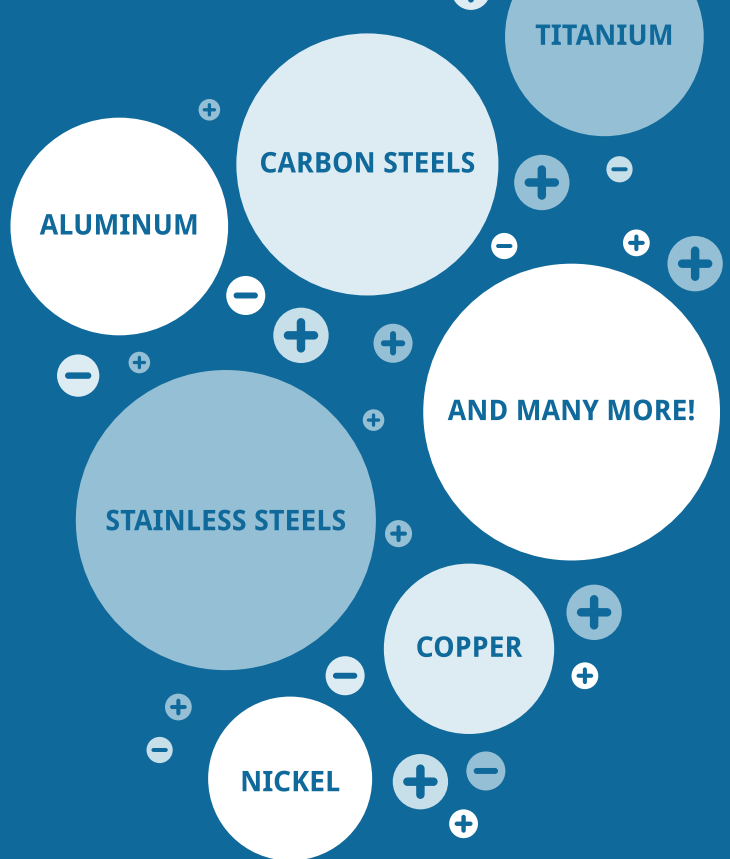


Q: WHAT DOES ELECTROPOLISHING DO?

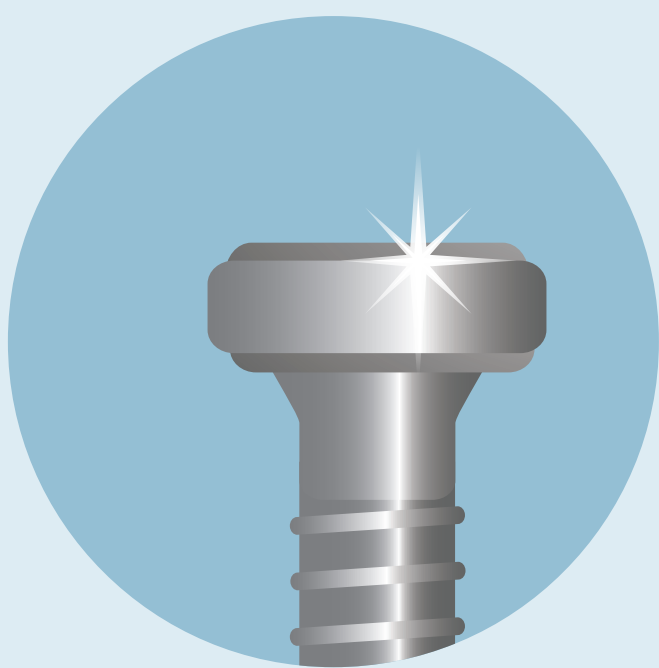
A: Electropolishing has a number of benefits for metal parts:

- ✓ Deburring
- ✓ Improved Corrosion Resistance
- ✓ Sizing
- ✓ Fatigue Life Improvement
- ✓ Microfinishing
- ✓ Eliminates Discoloration

WHAT METALS CAN YOU ELECTROPOLISH?



Q: HOW DOES ELECTROPOLISHING MAKE PARTS LAST LONGER?



A: Electropolishing removes all of these imperfections, making parts last longer.

One of the common imperfections is burrs. Burrs are small pieces of displaced surface material that can snag and break.

Other imperfections, such as inclusions, retain moisture and give bacteria a place to grow.

Rough, uneven surfaces—even ones with imperfections you can't see without a standard microscope—hinder electrical conductivity.

Microscopic cracks are initiation sites for parts to crack, bend and break prematurely.

Electropolishing removes all of these imperfections, making parts last longer.

WHAT'S WRONG WITH OTHER FINISHING METHODS?

Many parts aren't suitable for traditional methods like mechanical polishing and vibratory finishing. They may have complex shapes or are fragile, leading to distortion.

Electropolishing is capable of improving complex or delicate parts without imparting damage.

WHO USES ELECTROPOLISHING?

ELECTROPOLISHING IS USED FOR MANY INDUSTRIES



Surgeons & Dentists use it to keep their tools clean and functioning properly.



Manufacturers electropolish parts that are used in appliances like refrigerators and washing machines, so parts last longer and look better.



Automakers & Aerospace Manufacturers use it to perfect important parts like gears and flight-critical parts.

THESE ARE JUST A FEW EXAMPLES OF WHY ELECTROPOLISHING IS GROWING MORE AND MORE POPULAR IN A WIDE VARIETY OF INDUSTRIES.

DID YOU KNOW?

ELECTROPOLISHING improves the microinch finish by

50%

ELECTROPOLISHING can remove as little as

.0002"
& AS MUCH AS .003"

to achieve the desired result

ELECTROPOLISHING IS

30 TIMES
more corrosion resistant than
PASSIVATION

ABLE® **Electropolishing**
Advanced Metal Improvement Technologies

Since 1954, Able Electropolishing has been an industry pioneer providing electropolishing, passivation, titanium anodizing and other metal finishing services for clients around the world. Able works with stainless steels, aluminum, brass, copper and a wide variety of everyday and specialty alloys.

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